

## CLAIMS

## 1. Use of compounds comprising:

5 -- one or two X chains, namely an  $\alpha$ -D-xylopyranosyl (1,6)- $\beta$ -D-glucopyranosyl or  $\alpha$ -D-xylopyranosyl (1,6)-D-glucopyranose, or  $\beta$ -D-xylopyranosyl (1,4)- $\beta$ -D-glucopyranosyl or  $\beta$ -D-xylopyranosyl (1,4)-D-glucopyranose chain, or a reduced form of X, also called Xol,

10 -- one or two F chains, namely an  $\alpha$ -L-fucopyranosyl (1,2)- $\beta$ -D-galactopyranosyl (1,2)- $\alpha$ -D-xylopyranosyl (1,6)- $\beta$ -D-glucopyranosyl or  $\alpha$ -L-fucopyranosyl (1,2)- $\beta$ -D-galactopyranosyl (1,2)- $\alpha$ -D-xylopyranosyl (1,6)-D-glucopyranose chain, or an  $\alpha$ -L-fucopyranosyl (1,2)- $\beta$ -D-galactopyranosyl (1,2)- $\beta$ -D-xylopyranosyl (1,4)- $\beta$ -D-glucopyranosyl or  $\alpha$ -L-fucopyranosyl (1,2)- $\beta$ -D-galactopyranosyl (1,2)- $\beta$ -D-Xylopyranosyl (1,4)-D-glucopyranose chain, or a reduced form of F, also called Fol,

15 -- and at least one G chain, namely a  $\beta$ -D-glucopyranosyl or D-glucopyranose unit, substituted or not substituted in position 4, or a reduced form of G, also called Gol,

said X, F, and G chains being linked to each other in a random order, and comprising, if appropriate, the following modifications: (i) modification of hydroxyl groups, namely acetylated or methoxylated or acylated derivatives, whose glucose residue at the terminal position is reduced or not, (ii) modification of the terminal reducing unit, such as by reducing amination, (iii) oxidation, in position 6 of the accessible Gal and Glc residues,

said compounds having the property of:

- stimulating glutathione reductase,
- 25 - and/or of stimulating phospholipase D in plants,
- and/or of stimulating glycosylhydrolases,

within the scope of uses linked to the above-mentioned properties of said compounds, namely:

- the adaptation of plants to an abiotic stress, such as adaptation to the cold, or to a
- 30 hydric stress such as drought, humidity or salinity,
- the control of flowering,
- the control of fructification,

- the induction of defence reactions against pathogens such as bacteria, viruses, fungi.

with the exclusion of the above-mentioned use of the compound of formula XXFG.

2. Use of compounds according to claim 1, corresponding to acetylated derivatives chosen from:

-- the mono-acetylated forms in position 2 or 3 or 4 for xylose, or in position 3 or 4 or 6 for galactose, or in position 2 or 3 or 4 or 6 for glucose, or in position 2 or 3 or 4 for fucose,

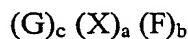
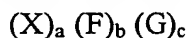
-- the di-acetylated forms in position 2 and 3, 2 and 4, 3 and 4, 2 and 6, 3 and 6, or 4 and 6 for glucose, or in position 2 and 3, 2 and 4, or 3 and 4 for xylose, or in position 3 and 4, 3 and 6, or 4 and 6 for galactose, or in position 2 and 3, 2 and 4, or 3 and 4 for fucose, or any combination taking into account two monoacetylated sugars making up the molecule,

-- the tri-acetylated forms in position 2, 3 and 4 for xylose, or in position 2, 3 and 4, or 2, 3, and 6 for glucose, or in position 3, 4, and 6 for galactose, or in position 2, 3, and 4 for fucose, or any combination taking into account three mono-acetylated sugars or a mono-acetylated sugar and a di-acetylated sugar making up the molecule,

-- the tetra-acetylated to totally acetylated forms, or any combinations of the different sugars, acetylated or not, making up the molecule.

3. Use according to claim 1 or 2, of compounds in which the sugars are in  $\alpha$  or  $\beta$  form, if appropriate, in pyranose or furanose form, and are interconnected by bonds of the 1 $\rightarrow$ 2, 1 $\rightarrow$ 3, 1 $\rightarrow$ 4, or 1 $\rightarrow$ 6 type.

4. Use according to one of claims 1 to 3, of compounds comprising an osidic structure chosen from those of the following formulae:



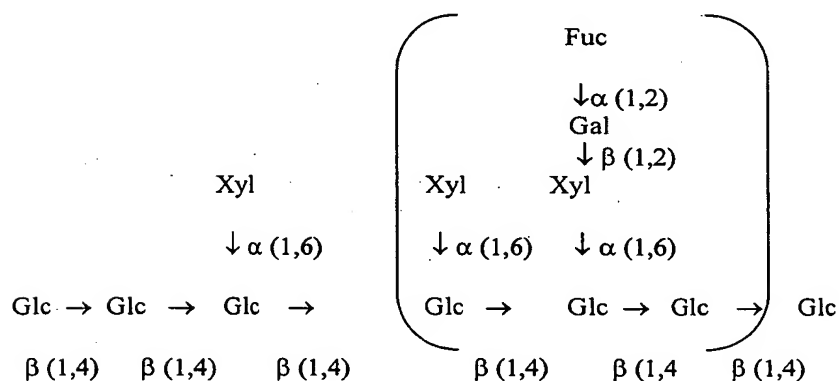
in which:

- G, X and F are as defined in claim 1,
- a, b, and c, independently of each other represent 1, or 2.

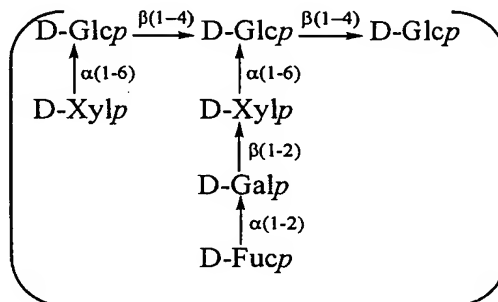
5           5. Use according to one of claims 1 to 4, of compounds comprising an osidic structure of formula XFG or comprising a structure derived from XFG corresponding to the formulae XGF, FXG, FGX, GFX, and GXF, whose glucose residue at the terminal position is reduced or not, or comprising structures derived by modification as defined in claim 1.

10           6. Use according to one of claims 1 to 4, of compounds chosen from the following: XGXG, XFGX, FGXX, FXGX, FXXG, GXXF, GXFX, GFXX, XXGF, XGXF, XGFX.

15           7. Use according to one of claims 1 to 4, of the compound of formula



8. Use according to one of claims 1 to 4, of the XFG compound of formula



9. Use according to one of claims 1 to 8, of polymers or oligomers comprising as monomeric unit, compounds as defined in one of claims 1 to 8, said polymers or oligomers comprising between 2 and approximately 300 monomeric units, in particular  
5 between 2 and approximately 100 units, or between 2 and approximately 50 units, or between 2 and approximately 20 units, in particular between 5 and 12 units.

10. Process of stimulating glutathione reductase in plants, characterized in that it comprises a stage of treatment of the plants with at least one compound defined in one  
10 of claims 1 to 9, in particular by irrigation of the soil in which these plants are cultivated, with a composition comprising said compound, or by coating the seeds with such a composition, or by foliar spraying of such a composition in the field on the plants to be treated.

11. Application of the process according to claim 10, for the implementation of a process for adaptation of the plants to an abiotic stress, such as adaptation to the cold, or to a hydric stress such as drought, humidity or salinity.

12. Process of stimulation of phospholipase D production in plants,  
20 characterized in that it comprises a stage of treatment of the plants with at least one compound defined in one of claims 1 to 9, in particular by irrigation of the soil in which these plants are cultivated, with a composition comprising said compound, or by coating the seeds with such a composition, or by foliar spraying of such a composition in the field on the plants to be treated.

13. Application of the process according to claim 12, for the implementation of a process for the control of flowering, and more particularly a process for the control of floral induction, of flowering duration, and of flower abscission, and/or for the implementation of a process for the control of plant fructification, and more particularly  
30 of a process for the control of the triggering and duration of fruit maturation, of leaf and fruit abscission.

14. Process for the stimulation of the production of glycosylhydrolases in plants, characterized in that it comprises a stage of treatment of the plants with at least

one compound defined in one of claims 1 to 9, in particular by irrigation of the soil in which these plants are cultivated, with a composition comprising said compound, or by coating the seeds with such a composition, or by foliar spraying of such a composition in the field on the plants to be treated.

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15. Application of the process according to claim 14, for the implementation of a process of induction of defence reactions against pathogens such as bacteria, viruses, fungi.

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